



WATER CONSERVATION IMPLEMENTATION GRANT APPLICATION

**Colorado Water Conservation Board
Attn: Ben Wade
1313 Sherman Street, Room 721
Denver, CO 80203**

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**Submitted by:
City of Lafayette
Public Works Department
1290 S. Public Rd
Lafayette, CO 80026**



COLORADO WATER CONSERVATION BOARD WATER CONSERVATION IMPLEMENTATION GRANT APPLICATION

PROJECT: CITY OF LAFAYETTE WATER CONSERVATION PLAN IMPLEMENTATION

1. Introduction and Eligibility

Over the years, the City of Lafayette has quietly become a sustainability leader in Boulder County by working diligently to conserve water; reduce waste at City and community events; increase recycling and composting; reduce air pollutants and greenhouse gas emissions; all in effort to reduce its overall carbon footprint.

Water Conservation is a top priority and the City provides a variety of programs including: residential and commercial Slow the Flow indoor water audits and outdoor irrigation audits; Garden-in-a-Box xeriscape planting program; Water-Wise landscaping seminars; residential and commercial toilet rebates; and membership and participation with EPA WaterSense and locally the 'Keep It Clean' partnership.

Lafayette has stepped up its renewable energy efforts by adding solar power to the roofs of the police station, the public library and recreation center. Combined with a solar garden at the wastewater treatment plant and another garden at City Hall, the City has installed 500 kilowatts of electric solar power capacity.

In addition to its solar sites, Lafayette captures methane gas at its wastewater treatment plant, generating heat for a portion of the wastewater treatment process. The city harnesses wind energy from a wind turbine installation at the public library.

The City has two strong citizen advisory committees that lead initiatives within the community. The Waste Reduction Advisory Committee leads the Zero Waste initiatives during the City's annual Peach Festival, which attracts 20,000 visitors and achieves a 90% or higher diversion rate. Additionally the Oatmeal Festival, which pulls in 3,500 visitors, enjoys a 98% waste reduction rate. The City also has Zero Waste stations and initiatives at City Hall.

The Lafayette Energy Sustainability Advisory Committee helped fund the City's first electric vehicle charging station located at the public library and an employee electric bike sharing program; created a Green Business Award program; funds a mini-grant program to educational organizations; developed an Energy Corner at the library for residents to learn more about alternative energy options; and helps promote and educate the citizens during local events.

Lafayette residents can properly recycle and dispose of their household hazardous waste by taking it to the Boulder County Hazardous Materials Management Facility. Lafayette offers residents several free organics' collection programs and the support of an organic farm and a weekly Farmers' Market top out the green efforts of the City.

The City of Lafayette is an award-winning community that supports and maintains sustainability practices. Lafayette envisions its efforts and focus to continue expanding in the sustainability arena and this funding opportunity aligns with Lafayette's vision. The City of Lafayette is seeking a Water Efficiency Grant from the Colorado Water Conservation Board (CWCB) to fund a project that will increase water conservation by replacing pre-rinse spray nozzles for more efficient ones at local restaurants and commercial and institutional kitchens.

2. List of City of Lafayette Work Group Members Involved in the Grant Project

Douglas Short, Public Works Director

1290 South Public Road
Lafayette, CO 80026
303.665.5588 x 3322
douglass@cityoflafayette.com

Douglas Short serves as the Public Works Director and will oversee project completion. He administers and manages the City's water supply, treatment and distribution systems, including water conservation; street improvements and maintenance, engineering, traffic control, fleet maintenance; trash/recycling/Zero Waste services; stormwater drainage systems and the wastewater collection and treatment systems.

Sarah L. Owsiany, Senior Clerk

1290 South Public Road
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303.665.5588 x 3328
saraho@cityoflafayette.com

Sarah L. Owsiany serves as the Senior Clerk for the Public Works Department for the City of Lafayette and will provide support through her knowledge of the City's existing water conservation measures. She will act as the City's project manager and will assist with overseeing the 'Rinse & Spray' pre-rinse spray nozzle replacement program and will monitor the success and water savings of the project.

Others involved in the Grant Implementation**Dan Stellar, CRC Water Division Director**

Center for Resource Conservation
2639 Spruce St.,
Boulder, CO 80302
303.999.3820 x 221
dstellar@conservationcenter.org

Dan provides information and program support across a full spectrum of water conservation opportunities including the management of the contract with the City of Lafayette to perform residential Slow the Flow indoor and outdoor irrigation audits, Water-Wise landscape seminars, and Garden-in-a-Box program. CRC will organize and conduct the 'Rinse & Save' pilot program targeting local Lafayette restaurants and commercial and institutional kitchens.

3. a) Identification of retail water delivery by covered entity for past five years:

The City of Lafayette's water comes entirely from surface sources. The City of Lafayette receives snowmelt runoff from South Boulder Creek, Boulder Creek and Coal Creek. This water flows into the Baseline, Waneka and the Goose Haven Reservoir Complex via nine ditches: Coal Ridge, Davidson, Dry Creek-2, Dry Creek Carrier, Enterprise, Goodhue, Leyner-Cottonwood, Lower Boulder, and South Boulder & Bear Creek.

Also, Colorado-Big Thompson (CBT) water can be delivered to Lafayette from Granby Reservoir through the Northern Colorado Water Conservancy District storage and conveyance system to the Goose Haven Reservoir Complex.

b) Background characterizing the local water system, potential growth and any other pertinent issues.

i) **Current and past per capita water use for the last five years.**

Table 1 – Past Five Years Water Use by Customer Category (acre-feet)

| Category | 2008 | 2009 | 2010 | 2011 | 2012 |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|
| Residential | | | | | |
| In-City | 2,129.0 | 1,923.5 | 1,945.2 | 2,016.5 | 2,304.1 |
| Out-of-City | 159.7 | 131.8 | 145.9 | 150.8 | 175.1 |
| Multifamily | | | | | |
| In-City | 617.6 | 595.8 | 612.2 | 563.0 | 649.3 |
| Out-of-City | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 |
| Commercial | | | | | |
| In-City | 473.8 | 408.8 | 407.7 | 443.4 | 525.3 |
| Out-of-City | 7.9 | 11.3 | 10.4 | 10.1 | 11.3 |
| Irrigation | | | | | |
| Commercial & Industrial | 512.6 | 335.6 | 454.3 | 507.4 | 624.3 |
| City Parks | 48.9 | 28.2 | 24.4 | 43.9 | 16.6 |
| Industrial | 36.9 | 26.8 | 21.3 | 19.0 | 26.6 |
| Special Ind. | 96.9 | 97.3 | 100.5 | 95.7 | 111.8 |
| Baseline WD | 37.0 | 44.2 | 44.1 | 49.3 | 49.1 |
| East Boulder County WD | 55.8 | 45.9 | 54.1 | 57.9 | 64.0 |
| TOTAL USE | 4,176.4 | 3,649.6 | 3,820.4 | 3,957.4 | 4,558.0 |
| Population | 24,140 | 24,407 | 24,453 | 25,242 | 26,136 |
| GPCPD* | 145 | 125 | 130 | 130 | 145 |
| Residential GPCPD** | 102 | 92 | 93 | 91 | 101 |
| *In-City only | | | | | |
| **Includes only In-City SF & MF | | | | | |

ii) **Population for the past five years, current year and 10-year population projection.** The City of Lafayette will experience slow growth within the next few decades because of growth restrictions currently in place. Developers are required to dedicate water rights to the City based on predetermined projected uses as described in its Municipal Code, Section 120, Article IV.

Table 2 – City of Lafayette Population

iii)

| Year | Population | % Population Growth |
|------|------------|---------------------|
| 2008 | 24,140 | |
| 2009 | 24,407 | 1.11% |
| 2010 | 24,453 | 0.19% |
| 2011 | 25,242 | 3.23% |
| 2012 | 26,136 | 3.54% |
| 2013 | 26,381 | 0.94% |
| 2014 | 26,626 | 0.93% |
| 2015 | 26,871 | 0.92% |
| 2016 | 27,116 | 0.91% |
| 2017 | 27,361 | 0.90% |
| 2018 | 27,606 | 0.90% |
| 2019 | 27,851 | 0.89% |
| 2020 | 28,096 | 0.88% |
| 2021 | 28,341 | 0.87% |
| 2022 | 28,586 | 0.86% |
| 2023 | 28,831 | 0.86% |

iv) **Estimated water savings goals achieved through implementation of the Plan in acre-feet and as a percentage.**

The City has not analyzed its entire water savings since 2009. In 2016 the City will revise its Water Conservation Plan and will include all conservation efforts made since 2009.

The total estimated annual water conservation savings goal from the 'Rinse & Save' pre-rinse spray nozzle replacement pilot program supported by this proposed grant from the CWCB is 3.81 acre-feet annually.

The calculation is based on these assumptions:

60 pre-rinse spray nozzles replaced x 120 min. per day x 325 days per year. Old nozzles use 1.6 gpm and new nozzles use 1.07 gpm for a savings of 0.53 gpm. This represents an annual savings per nozzle of 20,670 gallons or 1,240,200 gallons for all 60 nozzles. Therefore, the estimated Grant Program Water Savings Based on Projected Demands (AF) = 3.81 acre-feet annual savings

v) Estimates of water savings realized in the past five years through the City of Lafayette's water conservation efforts.

The City of Lafayette has implemented many residential water conservation programs that have resulted in a water savings of 17.34 acre-feet. However, it is likely that this value is higher in reality due to the fact that we are unable to calculate annual water savings that occur for the following water conservation efforts: water audits, Garden-in-a-Box xeriscape gardens, seminars, and water conservation direct mailers to every household.

The City used the following calculations in order to generate the water savings realized in the past eight years: 333,840 gallons were saved through the City's 2012 toilet rebate program and 5,317,320 gallons of water were saved through the CRC's Slow the Flow outdoor residential program from 2004 to present and the CRC's Slow the Flow residential indoor program from 2010 to present for a total of 5,651,160 gallons of water saved. Due to variables in reporting, we were not able to get CRC to breakdown their savings statistics for Lafayette for the past five years; however, we were satisfied with the number they provided for the last eight years.

$5,651,160 / 325,851 = 17.34$ acre-feet

vi) Adequacy, stability, and reliability of the City of Lafayette's water system.

The City of Lafayette has worked diligently to establish a varied and secure portfolio of water rights and a reliable water supply system. In addition, our citizens have consistently shown interest in protecting and conserving its valuable water resources.

Since the droughts of 1976 and 2002, the City aggressively pursued water rights acquisition to ensure that even during times of drought, our customers can be assured of adequate water supplies to meet basic needs. The City has controlling shares of Baseline Reservoir and the City joined the Northern Colorado Water Conservancy District and added raw and potable water storage facilities. The City is actively involved in the Northern Integrated Supply Project (NISP) and the Windy Gap Firming (WGFP). The 75th Street Pipeline, begun prior to the 2002 drought, provides a delivery system for the City's Boulder Creek water rights, as well as water delivered from the Colorado-Big Thompson project.

Any new development with a projected total annual water use of five acre-feet or more is required to dedicate units of Colorado-Big Thompson water to the City. Future capital improvements and future raw water supply planned for will provide the reliability needed to meet ultimate build out of Lafayette.

The City of Lafayette proactively works to address the uncertainty in water supply through several planning efforts through involvement in the NISP and WGFP projects and its water conservation efforts targeting residents, businesses and organizations.

c) Indicate how the Grant Program monies will be used to address the entity's stated water saving goals.

The City of Lafayette's primary goal as indicated in its 2009 Water Conservation Plan is to reduce total water use by 2016 by 287.1 acre feet through a combination of various demand-side measures.

One of the programs identified in the plan as a beneficial, long-term water conservation program is a pre-rinse spray nozzle replacement program called 'Rinse & Save' program. The City of Lafayette is requesting funds for this program that will save 3.81 acre-feet.

The City has identified the nozzle brand and model, T & S B-0107-J with a 1.07 gpm @60 PSI flow rate. It is AB1953 & ANSI/NSF Standard 61 compliant and consumes 33% less water than other EPA 2005 compliant valves at 1.6 gpm. Depending on the timing of this grant and purchase of the nozzles, the City would ensure the nozzles were listed on the EPA WaterSense labeled list. At this time we are uncertain when the WaterSense pre-rinse nozzle certification program will officially launch.

In addition to water savings, through this program, we hope to educate and promote behavioral changes in the kitchen workers in the City's restaurants and commercial kitchens. If we can instill these changes through the quick water audits and discussions with employees, our water savings could increase not only in Lafayette's commercial institutions but in homes as well.

d) Indicate how the activities will be monitored to estimate actual water savings during Project implementation.

The City project manager with the assistance from CRC representative(s) is responsible for managing the projects, monitoring savings, and reporting to CWCB on progress at 50% completion, 75% completion and a final report at the end of the grant period. See chart for tracking mechanisms.

Table 3 – Summary of Monitoring and Verification Activities for Tracking Water Savings

| Program | Tracking Methods and Metrics | | | |
|--|---|--|---|--|
| Pre-Rinse Spray Nozzle Replacement Program | Number of nozzles replaced and water audits performed | Number of employees trained on water savings | Individual customer water use; comparison of before and after install | Follow-up satisfaction survey of businesses using the nozzles either by phone or online survey |

4. a) Groups included within the Education and Outreach Efforts.

The City of Lafayette will promote and advertise the 'Rinse & Save' program on its website, utility bill and through its social media outlets. Lafayette staff will inform the Chamber of Commerce regarding this free program to its membership. In addition, the advisors that work with local businesses for the City of Lafayette's PACE (Partners for a Clean Environment) Zero Waste certification program and the Boulder County EnergySmart energy assessment services will help promote the program when they are visiting local businesses and organizations.

b) Specific Goals, Outcomes and ties to CWCB Goals

The City of Lafayette has targeted the residential sector for many years in regards to water conservation education and programs. We feel we have developed strong programs to educate and motivate our

residential water customers to save water and resources. We have Municipal Codes in place to ensure water conservation for new development.

Last year we began targeting our commercial customers by offering a toilet rebate program and have encouraged commercial entities to replace their older, inefficient toilets with new high efficiency WaterSense toilets.

We would like to expand these efforts and work with local restaurants and entities that have kitchens. One water-efficient measure to receive attention is replacing pre-rinse spray nozzles used by restaurant and cafeteria kitchen staff to remove loose or sticky food from plates and dishes prior to loading them in the dishwasher. The efficient nozzles utilize a 'knife-edge- spray rather than a 'shower-type' spray to better focus the available energy and remove food particles more efficiently.

Working with the CRC, we have identified 54 entities that include restaurants (45), grocery stores (2), hospitals (1), schools (1) and senior homes (2) that potentially could benefit from the replacement of an older, inefficient pre-rinse spray nozzle. Please note that some kitchens may require more than one nozzle so we are asking for a total of 60 nozzles for that reason. CRC will contact these establishments and offer a free pre-rinse spray nozzle and installation. We have estimated the cost of a free new nozzle and install to be a \$200 value for the business and this isn't even factoring in the water savings cost. We feel this is a major benefit of cost savings and conservation for an establishment and the program allows CRC in the door to do a quick water audit of the facility in which we hope to identify and inform the owner/manager of other water saving opportunities. CRC will follow up with the establishment after several months of using the new nozzle to survey their thoughts, usage ease and water conservation.

c) Specific activities funded by grant monies.

See 5. Project Scope of work below.

5. Project Scope

The City of Lafayette is seeking a Water Conservation Implementation Grant from the Colorado Water Conservation Board to implement a portion of the approved 2009 Water Conservation Master Plan which defines water conservation measures and programs that will promote and support efficient water use by the City's residential, commercial, industrial and institutional customers. The approved Plan, which identifies the various stages of comprehensive water conservation extending for the next ten years, has been prepared in adherence with the prevailing state statutory requirements.

This program as identified in section 4b will address the CWCB goals of promoting the benefits of water resource conservation.

The **first task** in this program will be public education and outreach projects. This task will be the responsibility of CRC, the City of Lafayette, PACE Zero Waste and Boulder County EnergySmart. CRC will contact pre-rinse nozzle-using establishments directly to promote this program. The City of Lafayette will promote 'Rinse & Save' using the City's website, comments on the bottom of utility bills and through social media networks. PACE Zero Waste and Boulder County EnergySmart will also notify qualifying

establishments of the 'Rinse & Save' program during their routine visits. The first task will also include the ordering of the 60 pre-rinse spray nozzles by CRC for \$50 each (totaling \$3,000).

The **second task** is the responsibility of CRC where they will install the pre-rinse spray nozzles at area establishments. The installation process by CRC includes all aspects of installs: contacting establishments, conducting installation, affixing stickers, conducting quick on-site survey, conducting follow-up surveys and conveying this information to the City of Lafayette. CRC will contact establishments, but will need a list of targeted establishments, contact information and City of Lafayette collateral (logos, letterhead, etc) to be supplied by the City.

The **third task** is an Impact assessment and would allow CRC to conduct a quantitative analysis to determine how much water is being saved as a result of this program. CRC would work with City of Lafayette staff to obtain water records for the participating establishments. CRC would then conduct an in-depth impact study to analyze the water savings of the program. The outcome of this would be a report to the City of Lafayette.

The **fourth task** includes the reporting of the program progress to the CWCB. The City of Lafayette will be submitting reports at the halfway-mark (50%), when the program is 75% complete and when the program is 100% complete.

We have identified a solid planning and implementation timeline on the next page.

Table 5 - 'Rinse & Save' Pre-Rinse Spray Nozzle Pilot Program Timeline

| | 2014 | | | | | | | | | | 2015 | |
|---|------------------------------|-----|-----|------|------|------------------|------|-----|------------------|-----|------|--------------------------|
| | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | JAN | FEB |
| Task 1: Outreach & Order Nozzles | START March 3 | x | x | | | | | | | | | |
| Task 2: Installation | | x | x | x | x | | | | | | | |
| Task 3: Impact Assessment | | | | x | x | x | x | x | x | x | | |
| Task 4: Reporting | | | | | | | | | | | | |
| 50% Report | | | | | | AUG 1 | | | | | | |
| 75% Report | | | | | | | | | NOV 3 | | | |
| Final Report | | | | | | | | | | | | END FEB 3 |

6. Budget Narrative & Detailed Use of Funds

Table 6 - Summarizes the total project budget, grant request and matching/in-kind contributions:

| | Description (Quantities/unit prices/vendors) | Responsibility | CWCB Grant Request | City of Lafayette Cash Match | Total Project Budget |
|----------------------------------|--|----------------------------|---------------------------------|------------------------------------|----------------------------|
| Task 1: Outreach | | | | | |
| | Initial direct contact with establishments | CRC | **Included in advising services | | |
| | Promotion using: Website, Utility bills, Social media | City of Lafayette | \$0.00 | \$0.00 | \$0.00 |
| | Promoting during routine visits with establishments | PACE Zero Waste | \$0.00 | \$0.00 | \$0.00 |
| | Promoting during routine visits with establishments | Boulder County EnergySmart | \$0.00 | \$0.00 | \$0.00 |
| | Ordering of Pre-Rinse Spray Nozzles (\$50/nozzle x 60 = \$3,000) | CRC | \$2,250.00 | \$750.00 | \$3,000 |
| Task 2: Installation | | | | | |
| | Installing Nozzles • Replacement Nozzle Stickers (Qty 100) • Quick water audits (Qty 60) (\$55/hour x 75 = \$4,125) | CRC | \$3,093.75 | \$1,031.25 | \$4,125 |
| Task 3: Impact Assessment | | | | | |
| | Quantitative analysis (\$55/hour x 30 hours = \$1,650) | CRC | \$1,237.50 | \$412.50 | \$1,650 |
| Task 4: Reporting | | | | | |
| | 50%, 75% & Final Reports | City of Lafayette | \$0.00 | \$0.00 | \$0.00 |
| | | | | | |
| | | Total Program | \$6,581.25 | \$2,193.75 | \$8,775 |
| | | | 75% | 25% | 100% |

City personnel do not account for their time per program. Therefore, in-kind labor is not listed above.

City staff will be responsible for program evaluation, monitoring and 50%, 75% and Final Reporting to CWCB.

7. Authorization to Commit Resources

The City of Lafayette submits this grant application to the Colorado Water Conservation Board for state funding assistance for the water conservation programs outlined in this proposal. I certify that the City of Lafayette has the financial and staff capacity to execute its share of the water efficiency implementation grant.

Doug Short, City of Lafayette Public Works Director

Date